

## Centrifugal Compressors Market Roundup

Grégory Junot, Sundyne's Compressor Product Line Manager, November/December 2021



### Centrifugal Compressor Roundup:

Sundyne offers 4 different centrifugal compressors – providing single- and multi-stage designs for API 617 and fit-for-purpose applications in oil & gas production, natural gas processing, power generation, hydrocarbon processing and chemical processing. Each model is custom built to provide pulsation- and vibration-free operation, and to deliver oil-free process gas with zero emissions. Sundyne's 4 centrifugal compressors are:

**Sundyne LMC Vertical Integrally-Geared Process Gas Compressor** – an economical, fit-for-purpose design offers **single-stage** compression, with:

- Flows to 3,550 acfm (6,000 am<sup>3</sup>/hr)
- Maximum working pressure 1,440 psi (100 bar)
- Maximum Speed: 34,200 RPM

- Temperature Range -200 to +500°F (-130 to +260°C)
- Space saving design is 25% the size of reciprocating, barrel or rotary screw compressors.

**Sundyne BMC Integrally-Geared Process Gas Compressor** – API 617 horizontal **single-stage** compressor provides:

- Flows to 3,550 acfm (6,000 am<sup>3</sup>/hr)
- Maximum working pressure 1,440 psi (100 bar)
- Maximum Speed: 34,200 RPM
- Temperature Range -200 to +500°F (-130 to +260°C)

**Sundyne LF 2X80 Base Mounted Integrally-Geared Multi-Stage Process Gas Compressor** – can be outfitted to meet API standards, or it can be economically engineered as a fit-for-

purpose compressor. The 2X80 features from one-to-four stages of centrifugal compression on a single gearbox, delivering:

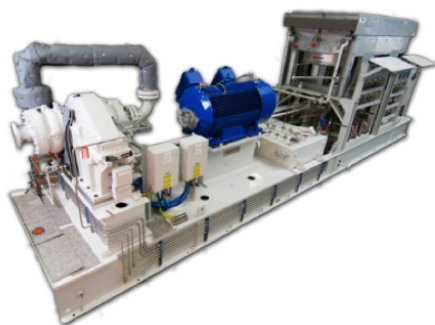
- Flows to 6,000 acfm (10,200 am<sup>3</sup>/hr)
- Maximum working pressure 1,440 psi (100 bar)
- Maximum Speed: 32,000 RPM (60 Hz), 32,000 RPM (50 Hz)
- Temperature Range -200 to +500°F (-130 to +260°C)

**Sundyne LF 2000 API 617 / ISO 10439 Base Mounted Integrally Geared Multi-Stage Process Gas Compressor** – The API-compliant LF 2000 features from one-to-six stages of centrifugal compression on a single gearbox, providing:

- Flows to 10,000 acfm (17,000 am<sup>3</sup>/hr)
- Maximum working pressure 5,000 psi (350 bar)

- Maximum Speed: 42,000 RPM (60 Hz), 42,000 RPM (50 Hz)
- Temperature Range -200 to +500°F (-130 to +260°C)

### Additional Details on the LF 2000 Centrifugal Compressor



The Sundyne LF 2000 multi-stage centrifugal compressor (known as a Pinnacle), has been widely deployed around the globe for midstream, hydrocarbon processing and chemical manufacturing applications including: fuel gas boost for power generation, hydrogen recycle, mole sieve dehydration, regeneration of demethanizers, waste gas and specialty chemical production.

The LF 2000's horizontal configuration features a modular baseplate that simplifies skid packaging and installation into any process environment. Packaging and instrumentation are customizable to any need & specification. Built to run continuously for 5 to 7 years without interruption, Sundyne Pinnacle machines provide the feature set and performance

envelope needed to address the Best Efficiency Point (BEP) of any process gas application.

Recently, as CCUS (Carbon Capture, Utilization and Storage) applications have risen in popularity, Sundyne multi-stage Pinnacle compressors have been increasingly deployed as feed gas compressors for Amine Scrubbing applications, **to reduce CO<sub>2</sub> from flue emissions**. With Amine scrubbing, CO<sub>2</sub> and other "sour" impurities in the gas require Stainless Steel or NACE-compliant corrosion-resistant materials. Flash conditions due to heating & cooling processes require high head. Pinnacle compressors meet these requirements, and deliver space-saving performance by offering one-to-six stages of centrifugal compression on a single gearbox.

### How Sundyne is Responding to Market Trends

We're seeing an increase in inquiries - and business - for single- and multi-stage compressors in areas such as:

1. **Transport for Green Hydrogen** - We're working with producers in the Middle East and Africa that have large solar infrastructures. These companies are making green hydrogen via electrolysis, and they require an efficient process to transport it from where it's produced, to where it will be used.
2. **Cleaner Synthetic Fuels & Feedstocks** - we're working with companies in Europe to process

Hydrogen, CO<sub>2</sub> and Methanol to make environmentally-friendly fuels for industrial vehicles, and also to produce cleaner feedstocks for chemical manufacturing.

3. **CCUS** - in addition to the Amine Scrubbing applications, our API-617 Pinnacle compressors provide a good fit for CO<sub>2</sub> sequestration applications - as all 6 stages of compression are required to deliver the high-pressures needed for CO<sub>2</sub> sequestration applications.

These types of applications are driving new trends - for higher pressures, and also to minimize risk & uncertainty.

We're investing to increase the capabilities of our compressors. We've also recently expanded our testing facilities, to offer customers a wider range of testing prior to deployment. Each compressor is built to exact customer requirements, and our expanded test center enables us to mimic the specific manner in which a machine will operate once it's deployed at an end-user's site. Compressors play a big role in critical applications that run 24 X 7 - so there can be no surprises or uncertainties when it comes to how they'll operate once deployed. Today, we're doing a lot more testing - which brings customers greater peace-of-mind, and it also saves them save time & money by avoiding lengthy adjustments on-site during commissioning.

I'd sum things up by saying that when it comes to Hydrogen processing, CCUS applications, and supporting cleaner manufacturing processes, we really are at the beginning of the story...



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